



State of Utah

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April 7, 2005

Mr. Craig A. Clark
P.O. Box 65
Newcastle, UT 84756

Subject: Private Drinking Water Well Test Advisory

Dear Mr. Clark:

This letter is an advisory to have your private water well tested for potential contaminants caused by infiltration of contaminated surface waters into earth fissures during the January 11-13, 2005 flood event in the Escalante Desert. Because these earth fissures may extend to great depths and reach the water table, diversion of surface waters into earth fissures may have caused ground water contamination. Although there is no direct evidence to confirm that your well has been contaminated, we are recommending that your wells be tested as a precaution.

A likely cause of the earth fissures is ground subsidence due to ground water withdrawal and lowering of the water table by long-term pumping of the unconsolidated alluvial aquifer. Ground water levels in the Escalante Desert have declined steadily and consistently since 1950 due to pumping of large wells for agricultural irrigation. Monitoring wells show large declines in the water table often in excess of 100 feet with virtually no water-level recovery during periods of above average precipitation (Lund, 2005).

Based on recent research conducted by the Utah Geological Survey, your private water well (water right 71-2014) has been identified as being in a location that has the potential to intercept contaminated surface waters that infiltrated the Holt ground fissure after flowing through a cattle feedlot (Lund, 2005). The feedlot operator reported seeing a vortex above the Holt fissure at the height of the flood, and it is likely that contaminated surface water from the feedlot reached the water table in that area.

The most likely ground water contaminants from animal feedlots are fecal coliform bacteria and organic nitrate/nitrite. Therefore, the Utah Division of Water Quality and the Southwest Utah Public Health Department recommend that you have your well water tested by a Utah Certified Laboratory for coliform bacteria and nitrate/nitrite as nitrogen. For a list of laboratories in your area holding current Utah certification, contact the Bureau of Laboratory Improvement at 801-584-8469. For example, the Southern Utah University (SUU) Water Lab located in Cedar City is a

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Utah Certified Laboratory that conducts bacteriological and chemical testing of ground water. The SUU Water Lab phone number is 435-586-7914 and the address is 351 West Center, Cedar City, Utah, 84720.

Fecal coliforms are bacteria whose presence indicates that the water may be contaminated with sewage or animal wastes. Disease-causing microbes (pathogens) in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. These pathogens may pose a special health risk for infants, young children, and people with severely compromised immune systems. If the test results indicate the presence of coliform bacteria in your well water, the water should be considered a health risk and water should not be consumed unless it is boiled first. Re-sampling should be done as soon as possible. If the results show the presence of coliform bacteria still exist, please contact the Southwest Health Department to find out how to have your water system disinfected by chlorination.

Primary sources of organic nitrate/nitrite include human sewage and livestock manure, especially from feedlots. Since they are very soluble and do not bind to soils, nitrates have a high potential to migrate to ground water. The federal maximum contaminant level (MCL) for nitrate/nitrite as nitrogen is 10 milligrams per liter (mg/l). If test results indicate nitrate/nitrite levels above 10 mg/l, you should stop consumption of your well water. Nitrate levels above the MCL in drinking water have caused serious illness and sometimes death. The serious illness in infants is due to the conversion of nitrate to nitrite by the body, which can interfere with the oxygen-carrying capacity of the child's blood. This can be an acute condition in which health deteriorates rapidly over a period of days. Symptoms include shortness of breath and blueness of the skin (blue-baby syndrome).

Please be aware that the Utah Division of Drinking Water only regulates public water systems and does not have the authority to regulate private drinking water wells. Although you are not required to test your well, this letter is intended as a health advisory from the Utah Division of Water Quality and the Southwest Utah Public Health Department recommending that you have your well water tested for coliform bacteria and nitrate/nitrite as nitrogen.

If you have any questions or comments, please contact Rob Herbert of the Utah Division of Water Quality at 801-538-6146, or Rod Cosslett of the Southwest Utah Public Health Department at 435-586-2437.

Sincerely,

Walter L. Baker, P.E.
Director

WLB/RFH:rh

Cc: Rod Cosslett, SW Public Health Dept.
Scott Hacking, SW District Engineer
Kevin Brown, UDDW Director
Dianne Nielson, UDEQ Executive Director

References

Lund, William R., 2005. Earth Fissures near Beryl Junction in the Escalante Desert, Utah Geological Survey Preliminary Report, <http://ugs.utah.gov/utahgeo/hazards/fissures.htm>, January 26, 2005.